

WHAT IS CLAIMED IS:

1. A method of at least partially compensating for an x-ray tube target angle heel effect, said method comprising:

positioning a filter having an anode side and a cathode side between an x-ray source and an x-ray detector, wherein the cathode side has a higher attenuation coefficient than the anode side, to at least partially compensate for the target angle heel effect.

2. A method in accordance with Claim 1 wherein said positioning a filter comprises positioning a wedge shaped filter, wherein the wedge shape comprises a horizontal top, a bottom, a first vertical side and a second vertical side, wherein the horizontal top and the bottom are not parallel and wherein the first vertical side and the second vertical side are unequal in length.

3. A method in accordance with Claim 2 wherein said positioning a wedge shaped filter comprises depositing a material on an x-ray tube window to form a wedge shaped filter.

4. A method in accordance with Claim 3 wherein said depositing a material comprises depositing aluminum on an x-ray tube window to form a wedge shaped filter.

5. A method in accordance with Claim 3 wherein said depositing a material comprises depositing copper on an x-ray tube window to form a wedge shaped filter.

6. A method in accordance with Claim 2 wherein said positioning a wedge shaped filter comprises positioning the wedge shaped filter proximate an x-ray tube casing filter separated from an x-ray tube window by an oil gap.

7. A method in accordance with Claim 6 wherein said positioning a wedge shaped filter further comprises positioning an aluminum wedge shaped filter.

8. A method in accordance with Claim 6 wherein said positioning a wedge shaped filter further comprises positioning a copper wedge shaped filter.

9. A method in accordance with Claim 2 wherein the second vertical side comprises a length between 0.5mm and 1.5mm thicker than the first vertical side.

10. A method in accordance with Claim 9 wherein the second vertical side comprises a length of 1mm greater than the first vertical side.

11. A method in accordance with Claim 1 wherein said positioning a filter comprises positioning a concave-wedge shaped filter, wherein the concave-wedge shape comprises a horizontal top, a concave bottom, a first vertical side and a second vertical side, wherein the first vertical side and the second vertical side are unequal in length.

12. An x-ray tube comprising:

an anode;

a cathode;

a beryllium window; and

a material deposited on said window, wherein said material is wedge shaped, wherein said wedge shape comprises a horizontal top, a bottom, a first vertical side and a second vertical side, wherein said horizontal top and said bottom are not parallel and wherein said first vertical side and said second vertical side are unequal in length.

13. An x-ray tube in accordance with Claim 12 wherein said wedge shaped filter being positioned includes depositing a material on an x-ray tube window to form said wedge shaped filter.

14. An x-ray tube in accordance with Claim 13 wherein said material deposited on an x-ray tube window is aluminum.

15. An x-ray tube in accordance with Claim 13 wherein said material deposited on an x-ray tube window is copper.

16. An imaging system for scanning an object comprising:

a radiation source;

a radiation detector positioned to receive radiation from said radiation source;

a computer operationally coupled to said radiation source and said radiation detector; and

a filter having an anode side and a cathode side, positioned between said source and said detector, wherein said cathode side has a higher attenuation coefficient than said anode side, to at least partially compensate for a target angle heel effect.

17. A system in accordance with Claim 16 wherein said filter is wedge shaped, wherein said wedge shape comprises a horizontal top, a bottom, a first vertical side and a second vertical side, wherein said horizontal top and said bottom are not parallel and wherein said first vertical side and said second vertical side are unequal in length.

18. A system in accordance with Claim 17 wherein said wedge shaped filter being positioned includes depositing a material on an x-ray tube window to form said wedge shaped filter.

19. A system in accordance with Claim 18 wherein said material deposited on an x-ray tube window comprises aluminum.

20. A system in accordance with Claim 18 wherein said material deposited on an x-ray tube window comprises copper.

21. A system in accordance with Claim 17 wherein said wedge shaped filter being positioned includes positioning said wedge shaped filter proximate an x-ray tube casing filter separated from an x-ray tube window by an oil gap.

22. A system in accordance with Claim 21 wherein said wedge shaped filter being positioned comprises aluminum.

23. A system in accordance with Claim 21 wherein said wedge shaped filter being positioned comprises copper.

24. A system in accordance with Claim 17 wherein said second vertical side comprises a length between 0.5mm and 1.5mm thicker than said first vertical side.

25. A system in accordance with Claim 24 wherein said second vertical side comprises a length of 1mm greater than said first vertical side.

26. A system in accordance with Claim 16 wherein said filter is concave-wedge shaped, wherein said concave-wedge shape comprises a horizontal top, a concave bottom, a first vertical side and a second vertical side, wherein said first vertical side and said second vertical side are unequal in length.

27. A Computed Tomography (CT) imaging system for scanning an object comprising:

an x-ray source;

an x-ray detector positioned to receive x-rays from said source;

a computer operationally coupled to said x-ray source and said x-ray detector;

and

a filter having an anode side and a cathode side, positioned between said source and said detector, wherein said cathode side has a higher attenuation coefficient than said anode side, to at least partially compensate for a target angle heel effect.

28. A system in accordance with Claim 27 wherein said filter is wedge shaped, wherein said wedge shape comprises a horizontal top, a bottom, a first vertical side and a second vertical side, wherein said horizontal top and said bottom are not parallel and wherein said first vertical side and said second vertical side are unequal in length.

29. A system in accordance with Claim 28 wherein said wedge shaped filter being positioned includes depositing a material on an x-ray tube window to form said wedge shaped filter.

30. A system in accordance with Claim 29 wherein said material deposited on an x-ray tube window is aluminum.

31. A system in accordance with Claim 29 wherein said material deposited on an x-ray tube window is copper.

32. A system in accordance with Claim 28 wherein said wedge shaped filter being positioned includes positioning said wedge shaped filter proximate an x-ray tube casing filter separated from an x-ray tube window by an oil gap.

33. A system in accordance with Claim 32 wherein said wedge shaped filter being positioned is aluminum.

34. A system in accordance with Claim 32 wherein said wedge shaped filter being positioned is copper.

35. A system in accordance with Claim 28 wherein said second vertical side comprises a length between 0.5mm and 1.5mm thicker than said first vertical side.

36. A system in accordance with Claim 28 wherein said second vertical side comprises a length of 1mm greater than said first vertical side.

37. A system in accordance with Claim 27 wherein said filter is concave-wedge shaped, wherein said concave-wedge shape comprises a horizontal top, a concave bottom, a first vertical side and a second vertical side, wherein said first vertical side and said second vertical side are unequal in length.